

The D0 Muon System: Status and Plans

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The D0 Muon System

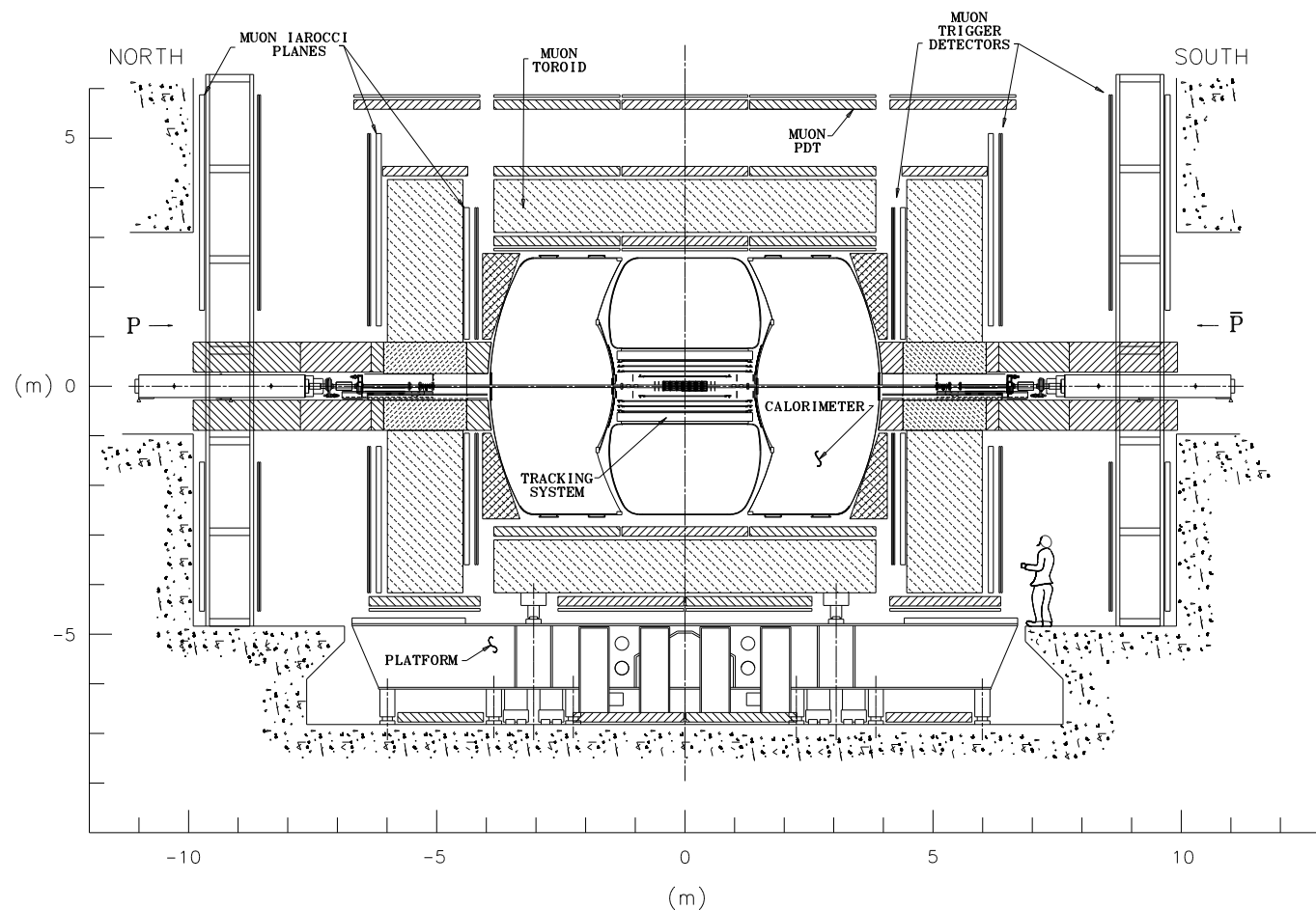
central: Central Drift Chambers Central Scintillation Counters ($|\eta| < 1$)

forward region:

Forward
Mini-Drift Chambers

Forward
Scintillation Counters

($1 < |\eta| < 2$)



Plotted Fri Sep 22 10:53:16 CDT 1995 by cease

Percentage of Operating Channels

all systems: readout and data taking are stable

system	operating channels
Central Drift Chambers	99.5 %
Central Scintillation Counters	99.9 %
Forward Mini-Drift Chambers	99.5 %
Forward Scintillation Counters	99.9 %

Forward Mini-Drift Chambers

2002/03/03 20.39

study efficiency vs. plane

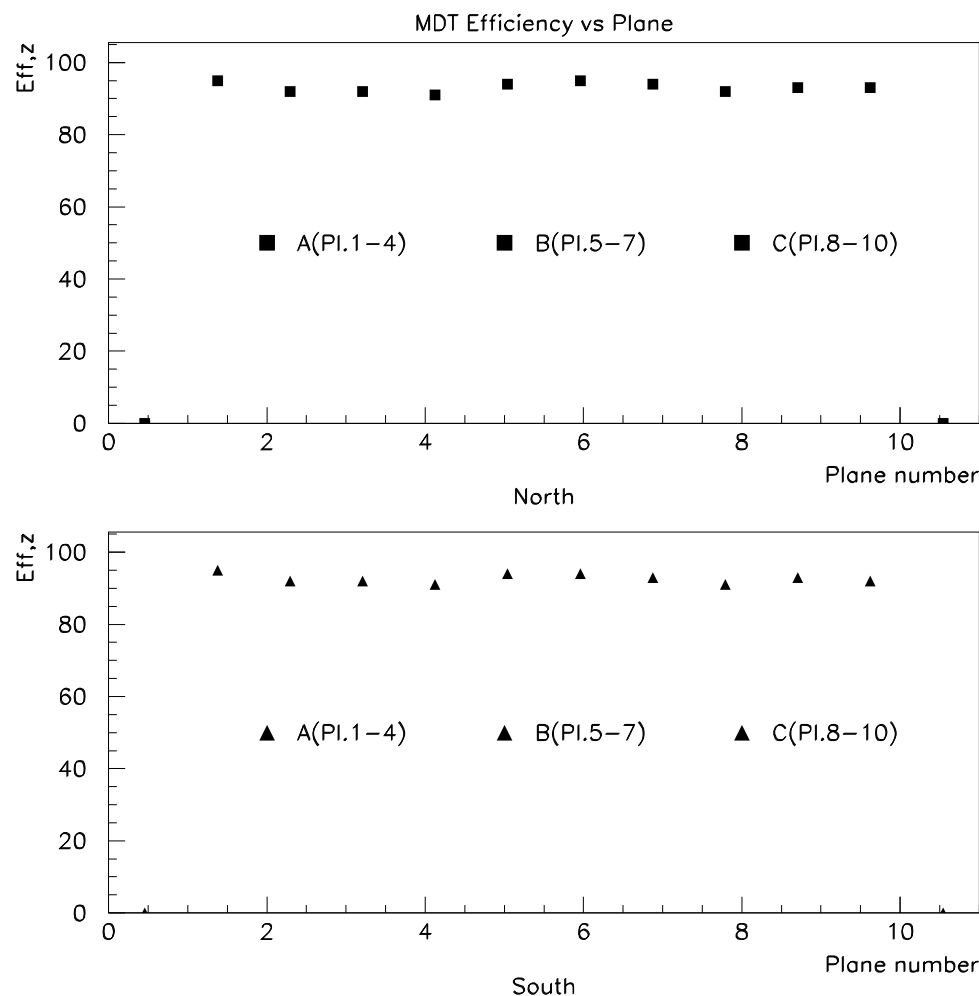
North & South
A-, B-, C-layer

$$\rightarrow \epsilon_{\text{measured}} = (93 \pm 2)\%$$

reference (geometry):

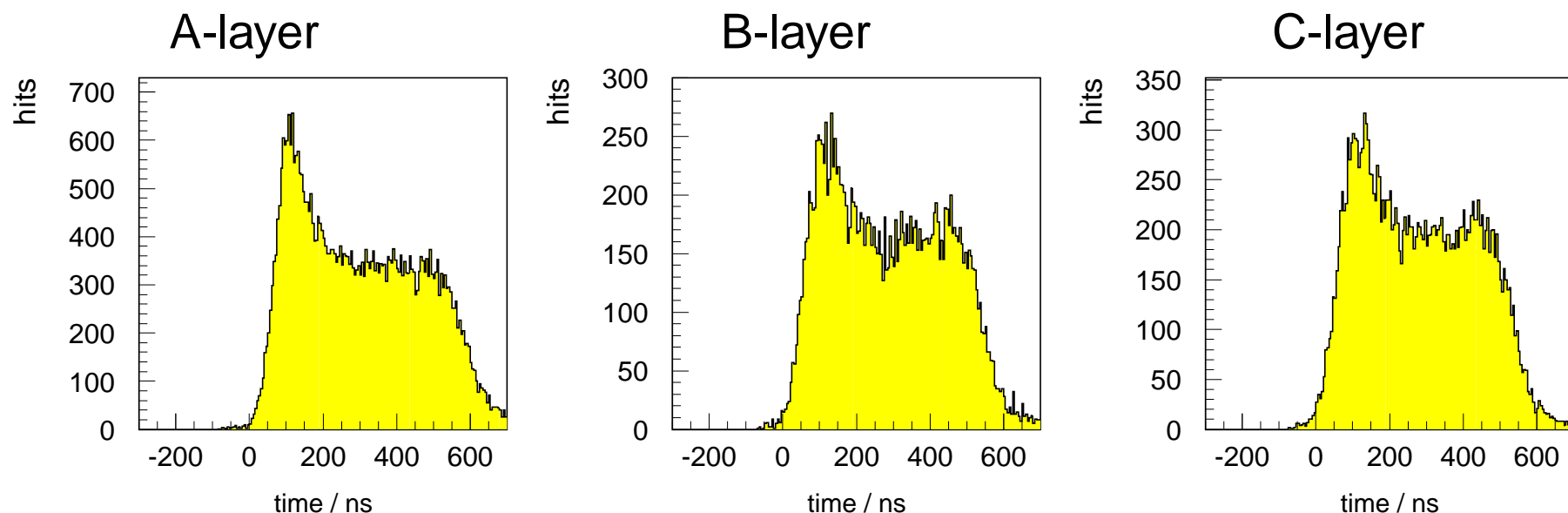
$$\epsilon_{\text{Monte Carlo}} = (94 \pm 2)\%$$

\Rightarrow close to optimum



Central Drift Chambers

t0-values have been adjusted to good precision
time distributions for hits on track segments:



early hits starting at $t \simeq 0$ ns

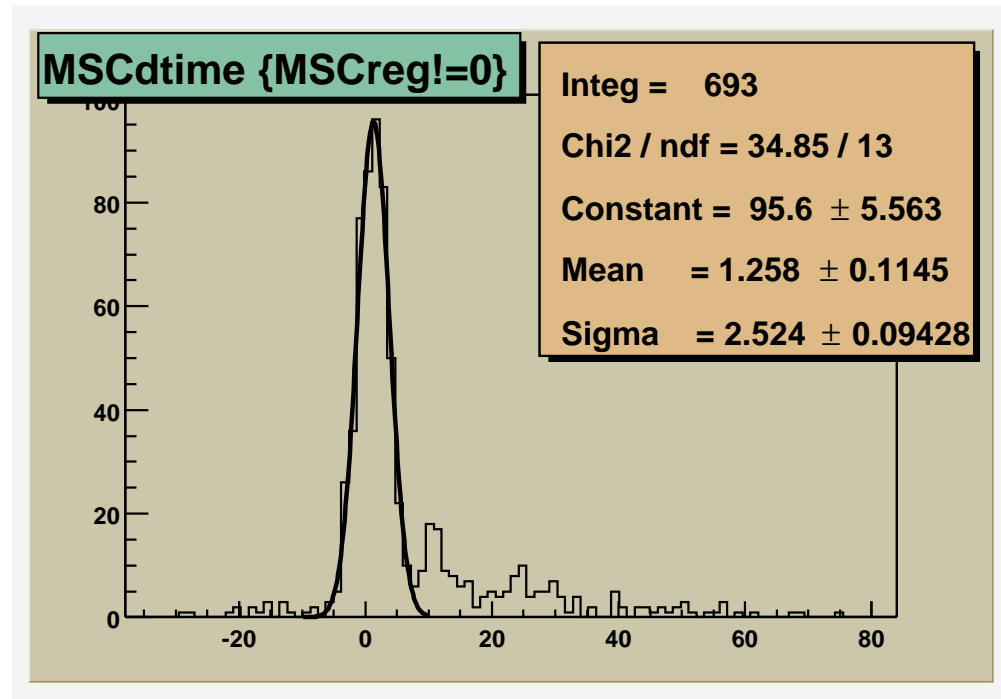
last hits at $t \simeq 500$ ns (corresponding to $d_{\text{drift}} = 5$ cm)

- to be studied: efficiencies / aging of chambers

Forward Scintillation Counters

t0s have been determined
using hits on track segments

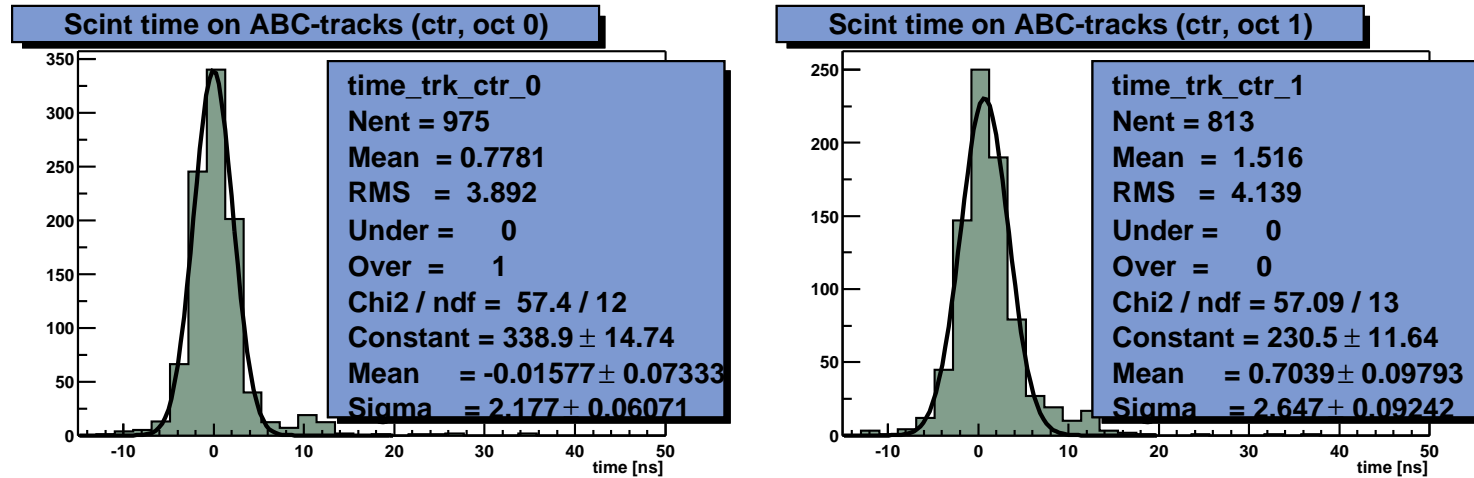
⇒ here:
cross check using a different
data sample



t0-distribution in a sample of J/psi events

Central Scintillation Counters

A-layer scintillator time distributions for ABC tracks



⇒ t0 values are well adjusted

plans:

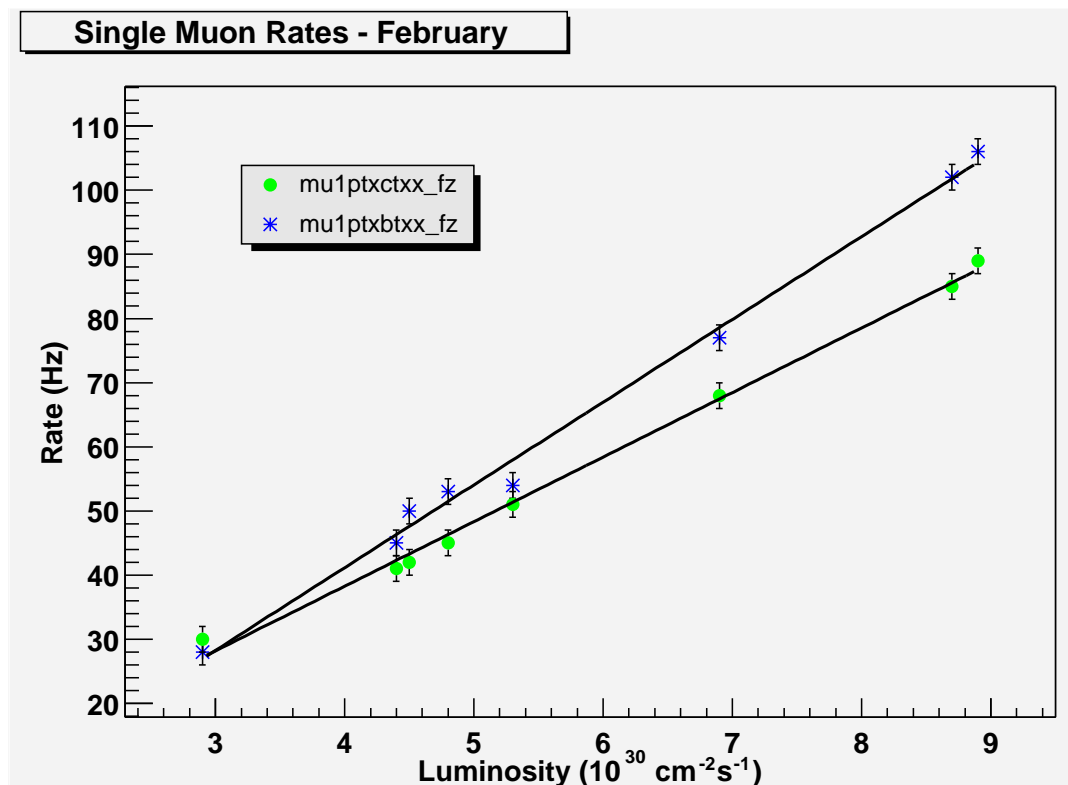
- continue monitoring and gain studies for central counters
- study effects of additional shielding

Trigger

trigger rate of L1 trigger
(→ scintillation counters)

working on:

- L1: incl. tracking detector
- muon L2
- muon L3



purity of L1 trigger: central $p \approx 7\%$ / forward $p \approx 50\%$

Summary

The D0 muon system is in good shape!!!

- > 99% of all channels are operating
- no known hardware problems / stable readout
- Level 1 trigger is working — other levels are coming